Naval War College Review

Volume 32
Number 1 *Winter*

Article 3

1979

Salt Under the Carter Administration

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SALT I and the Vladivostok Agreement are fact. SALT II is at hand. Some possible, if vague, points and problems of SALT III may be discerned. An "outsider" here presents a survey and offers suggestions.

SALT UNDER THE CARTER ADMINISTRATION

by

J.I. Coffey

Introduction. President Carter (and key members of his administration) seemingly have an approach to arms control different from that of the Ford and Nixon administrations, which generally ranked strategic arms limitations below improvements in U.S.-Soviet relations. While they sought limitations that could curb the arms race and, they hoped, achieve strategic stability, they did not push their proposals to the breaking point; instead, they relied more on U.S. defense programs to achieve U.S. objectives–including that of the ability to "win" a nuclear war with the Soviet Union.[1] This emphasis on the potential contributions of strategic arms limitations to détente made it possible for these Administrations to regard as "successes" outcomes such as SALT I and the Vladivostok Agreement, even though these affected strategic nuclear forces only marginally.

Mr. Carter has seemingly been less concerned than his predecessors with détente (which he attacked during his Presidential campaign) and even more concerned than they about Soviet weapons buildups. Conversely, he has displayed more empathy for arms control, calling at various times for progress on mutual force reductions, for curbs on arms sales, for limits on force deployments, for an end to nuclear testing and even for the ultimate abolition of nuclear weapons.[2] He has therefore sought to head off threats from the Soviet Union by seeking cuts in and curbs on strategic nuclear forces, in preference to countering these threats by unilateral weapons programs. This paper will discuss the approach to SALT taken under the Carter administration, to include not only the philosophical and the pragmatic differences between this approach and that taken by the

Nixon-Ford administrations but also the effect on U.S.-Soviet relations, the implications for strategic stability and some of the problems in and with SALT.

The Carter Proposals. When the Carter administration took office, it inherited both an agreement reached by President Ford and General Secretary Brezhnev at Vladivostok in November 1974 and a set of negotiations designed to flesh out that agreement in treaty form. The Vladivostok Agreement provided for:

1. Identical U.S./Soviet ceilings of 2,400 strategic nuclear delivery vehicles (ICBMs, SLBMs, and heavy bombers), with freedom to "mix" these, i.e., to alter existing numbers and ratios of SNDVs;

2. Identical U.S./Soviet ceilings of 1,320 launchers for multiple independently targetable reentry vehicles (MIRVs);

3. A ban on the construction of new ICBM silos or other fixed ICBM launchers, and on the conversion of "light" ICBMs to "heavies," a restriction that had been part of the SALT I Agreement;

4. An understanding that intercontinental bombers carrying air-launched ballistic missiles (and, according to Soviet sources, air-launched cruise missiles with ranges in excess of 2,500 kilometers) should be counted against the number of MIRVed launch vehicles allowed.[3]

The Vladivostok Agreement, as might be expected from any short document resulting from a brief meeting, left open or obscure a number of issues that necessarily preoccupied the teams negotiating SALT II. One of these was whether the President and the General Secretary had agreed to limitations on air-launched cruise missiles, as Moscow contended and Washington disagreed.[4] Whether this was or was not the case, the conferees began to talk as though such limitations were part of the agreement and to discuss how cruise missiles should be limited, in terms of range, and whether the bombers carrying them should also be counted against MIRVed SNDVs. Another issue that arose, as it had after SALT I, was how to define "light" and "heavy" missiles, as the unilateral definition given by the United States in 1972 (that a "heavy" ICBM was any missile larger than a "light" ICBM) was neither determinable nor acceptable; moreover, the Soviets could argue, with perfect truth, that their newer ICBMs, although very much larger than earlier models, did not violate the explicit proviso that "the dimensions of land-based ICBM silo launchers will not be significantly increased"—that is to say, by more than "10-15%."[5] A similar problem plaguing the negotiators was that of how to count "heavy" bombers. One issue was whether to charge entire inventories against the 2,400 total or only those aircraft in operational squadrons, which would make U.S. force figures significantly lower. Another and more controversial issue was whether to count the Soviet Backfire B, a new bomber that is larger than old U.S. and Soviet "medium" bombers, though smaller than "heavy" ones. And then there were the problems of counting mobile ICBMs and of verifying the limitation on numbers of MIRVed missiles, as some Soviet types come in a number of modes, some MIRVed and some not. In brief, the Vladivostok Agreement, though it established "equality" in numbers of SNDVs and in MIRVed launchers, and set these limits for a period of 10 years, by no means resolved all the problems attendant on implementing that agreement—much less those deriving from issues that were not tackled, such as that of banning new weapons or precluding significant qualitative improvements in existing ones.

Although he made no public statements to this effect, it may be that

President Carter, like many others, felt that the Vladivostok Agreement simply registered existing or proposed weapon systems, rather than imposing curbs on them. Moreover, it is certain that Mr. Carter disapproved of the negotiating tactics of the previous Administration, specifically of those of former Secretary of State Henry A. Kissinger. He may also have been motivated by a desire to reach decisions concerning strategic nuclear forces that could affect the defense budget that he had inherited from the Ford administration and could help him carry out his campaign commitment to trim some billions of dollars from that budget. Whatever the reason, or combination of reasons, Mr. Carter and his advisors put an effective halt to ongoing negotiations on the implementation of the Vladivostok Agreement while they prepared several new proposals which were conveyed to General Secretary Brezhnev by U.S. Secretary of State Vance in March 1977.

The "Comprehensive Option." The first and most far-reaching proposal submitted by Mr. Vance called for:

1. Reducing the overall force ceiling on ICBMs, SLBMs and intercontinental bombers from 2,400 to 1,800-2,000;

2. Reducing the 308 modern large ballistic missiles ("Heavy" ICBMs) authorized the U.S.S.R. under SALT I to 150 SS-9s and/or SS-18s;

3. Reducing MIRVed launchers from 1,320 to 1,100-1,200, with a subceiling of 550 on land-based missiles;

4. Freezing the deployment of all ICBMs, banning modification of existing ones, and banning the development, testing and deployment of new ones;

5. Eliminating mobile ICBMs;

6. Limiting flight tests for ICBMs and SLBMs to 6 each per year;

7. Precluding all cruise missiles with ranges over 2,500 kilometers (1,350 nautical miles) and requiring that airborne cruise missiles with ranges over 600 kilometers (324 nautical miles) be launched from no aircraft other than "heavy" bombers.[6]

The "Comprehensive Option," if accepted, would have gone far beyond the Vladivostok Agreement. For one thing, it would have reduced markedly the number of SNDVs allowed and, to a lesser degree, the number of MIRVs authorized. For another, it would have placed comparatively low subceilings on MIRVed ICBMs and on "heavy" Soviet ICBMs. For a third, it would have imposed qualitative constraints on missiles (notably on ICBMs) through limits on flight tests, through constraints on the modification of existing ICBMs, and through a ban on new ones. Finally, it would have resolved the cruise missile-Backfire controversy by putting limits on the range (though not the number) of air-launched cruise missiles (ALCMs) and by excluding the Backfire from the proposed agreement. The net result would have been deep cuts in Soviet strategic nuclear forces (and lesser ones in American SNDVs), the capping of ongoing Soviet weapons system programs and the cessation of U.S. plans for new ICBMs, delays in the time when current missile systems would attain high accuracies, and some minor limitations on ALCMs—though not GLCMs (ground-launched cruise missiles) or SLCMs (submarine-launched cruise missiles). In sum, the "Comprehensive Option" was, as its name implies, both more extensive and more far-reaching than the Vladivostok Agreement.[7]

Vladivostok With Cruise Missiles. The U.S. fallback position was to settle temporarily for the basic agreements reached at Vladivostok, deferring disputed points such as the question whether to count the Soviet Backfire bomber and whether to put constraints on cruise missiles until later. Although the Backfire is in production, and long-range cruise missiles are not, the latter

would add significantly to American strategic nuclear capabilities, and particularly to its hard target kill potential. Moreover, the lack of any constraints on cruise missiles meant that the United States would, in the absence of any new agreement, be free not only to develop sea-launched and ground-launched versions, as well as air-launched ones, but to deploy the former types in areas close to the Soviet Union and to disseminate them to the NATO allies. Thus it is understandable that Soviet Foreign Minister Gromyko should not only denounce this proposal but also resurrect previously buried issues, such as the deployment of forward-based systems in Europe and the question of not transferring strategic weapons to third countries.[8]

The Current Draft Agreement. Following Soviet rejection of its March proposals, the Carter administration reconsidered its positions and engaged in extensive negotiations with the Soviet Union at various levels. Although these have not been concluded, it looks as though any new agreement will take the following form:

1. Ceilings of 2,250 on SNDVs, with a subceiling of 308 on modern large ballistic missiles (this being the number the Soviets already have) and a precise definition of what constitutes a "modern large ballistic missile."

2. Continuation of the 1,320 limit on MIRVed vehicles, but with new subceilings of 820 on ICBMs and of 1,200 on all missiles;

3. Heavy bombers carrying air-launched cruise missiles would be counted as MIRVed vehicles, as would any wide-bodied commercial aircraft adapted to this mission;

4. Range limitations of 2,500-3,500 kilometers would be placed on all cruise missiles;

5. Cruise missiles up to this range could be developed and tested during the next 3 years, but none with ranges over 600 kilometers (324 nautical miles) could be deployed, except for ALCMs;

6. The Backfire bomber will not be counted but the Soviet Union will give separate assurances concerning the rate of production, the bases to which it will be deployed and its potential for in-flight refueling.[9]

7. Some constraints will be placed on the development and testing of new missiles—though there is still disagreement as to the form these should take and the weapons to which they should apply.[10]

An agreement along these lines, whether or not it was the version favored by the United States, would still allow the Soviets to achieve, by 1985, a significant hard-target kill capability, based on large numbers of sizable warheads for current and future ICBMs. The totals reached would, however, be less than under the Vladivostok Agreement and the capabilities for knocking out U.S. ICBMs reduced—or at least delayed. Moreover, the United States would gain considerable freedom to develop cruise missiles of all types and would have the ability to deploy sizable numbers of ALCMs—though not as many as if its variant of the Vladivostok Agreement had been accepted. Perhaps most importantly, the potential agreement would place some limitations on the development of new weapons and would facilitate verification, as both sides have apparently agreed to count all missiles of a given type as MIRVed once one such missile has been tested in a MIRVed mode. Thus this "Current Draft Agreement" should achieve more than did the Vladivostok Agreement, if less than the "Comprehensive Option," and it should, in the "Statement of Principles" that will accompany it, set objectives for future arms limitations.

Supporters of the Carter administration may argue that these achievements result from the President's initiative in "throwing down markers," an argument that suggests that the "Comprehensive

Option" should be viewed more as a goal than as a proposal. Opponents may, as one already has, describe Mr. Carter's policies as a "rooster's quadrille: a great puffing out and then a gradual drawing in." Both would probably agree that it will be more difficult to obtain assent within the United States now, because of Mr. Carter's apparent fallback, than would have been the case earlier. Whether or not this latter judgment turns out to be true depends, in part, on the attitudes and images of U.S. political elites which, as the debate on the Panama Canal showed, are unlikely to be affected by facts. It may in part, however, depend on assessments of the progress made by the Carter administration toward its announced goals and the desirability of these goals.

SALT and U.S.-Soviet Relations. One factor to consider in the approaches to SALT of the Carter administration is their effect on U.S.-Soviet relations, as in a circular fashion the status of these relations will affect the prospects for agreement on strategic arms limitations and proposals for arms limitations can, as will be seen, affect these relations. Obviously, such proposals are only one among many factors, ranging from the intensity of the U.S.-Soviet competition for influence through differing concepts of détente to the character and scope of economic interactions; hence their effect may be only marginal. Nor should the effect of SALT proposals on U.S.-Soviet relations be the prime consideration in drawing up those proposals, as other objectives (such as strategic stability) and other interests (such as the maintenance of alliance cohesion) also affect proposals—as they should. Nonetheless, because it takes two to agree, anyone evaluating SALT under the Carter administration must look (as that Administration should have) at potential Soviet responses to various proposals.

One must begin by noting that the Soviet interest in strategic arms limitations, like that of the United States, is both mixed and contradictory. On the one hand, the U.S.S.R. evidently desires to push "military détente" as a complement to "political détente" in order "to accomplish one of the most important tasks of our time—the task of limiting and ending the arms race, especially the nuclear arms race."[11] While it is impossible to appreciate fully all the motives for this Soviet interest, a number are obvious. One is to preclude the development by the United States of new weapons, such as the B-1 bomber or its successor, the Trident SLBM, and the cruise missile, which could at least complicate, if not threaten, the task of maintaining adequate Soviet strategic nuclear forces. Another is to reduce the cost of maintaining those forces, which will require extensive upgrading and modernization if they are to meet the dual requirements of survivability and combat capability; even under the current Draft Agreement the U.S.S.R. will have to replace over 1,000 ICBMs to complete this process.[12] A third motive may well be concern lest failure to reach agreement on strategic arms limitations not only poison U.S.-Soviet relations but strengthen the "right-wing elements in the United States" who, in the Soviet view, are seeking to promote "American imperialism."[13]

This does not mean that the U.S.S.R. is prepared to accept any and all agreements that may be proposed—as the history of SALT shows. One reason for this is that the Soviets have a different view of the strategic balance, which does not seem nearly as advantageous to them as many Western analysts argue that it is.[14] Another is that Soviet concepts of deterrence, and of the ways in which strategic nuclear forces should be employed in the event deterrence fails, differ markedly from those of many Americans, in that they call for forces potentially capable of "winning" a nuclear war.[15] A third (and somewhat contradictory) factor is Soviet insistence

on strict equality and the avoidance of unilateral advantages, or, to put it in the words of a *Pravda* editorial, any new agreement "should consistently embody the principle of equality and equal security for both sides . . . while giving no one a one-sided advantage."[16] A final point, at least for here, is that the U.S.S.R. tends to negotiate slowly, cautiously, and from agreed points of departure and hence is likely to be upset by sudden and drastic changes in negotiating positions—particularly where these seem to reverse understandings previously reached.

The Nixon and Ford administrations had catered to these predispositions by negotiating agreements that ostensibly were based on the principle of equality and that left largely untrammeled Soviet (and American) programs for the modernization of strategic nuclear forces; indeed, this was one of the criticisms of the Vladivostok Agreement. Moreover, both of these Administrations had moved slowly in negotiations with the Soviet Union, save for flurries in May 1972 at the time of SALT I and in October 1974, when the Vladivostok Agreement was reached, thereby giving time for incremental progress as well as, some critics maintain, for the initiation of programs that might vitiate that progress. Whatever the stated objectives of strategic arms limitations, in terms of maintaining strategic stability and enhancing the survivability of land-based systems,[17] these in practice took second place to political gains—and, some would say, to political careers—with more reliance placed on U.S. technological advantages than on arms control to secure strategic objectives.

Whether the Carter administration was moved by a strong desire to "stake out a position" in arms control (as its defenders suggest) or by the need to disassociate itself from the practices of the previous Administration (as some critics charge) it may well have proceeded without a full understanding of Soviet attitudes and practices; at any rate, the "Comprehensive Option" flew in the face of virtually all cherished Soviet interests. For one thing, while ostensibly preserving "equality" in number of launchers and MIRVs, it called for disproportionate reductions by the U.S.S.R., which would have had to eliminate some 400-600 newer SNDVs, as against 0-100 for the United States. For another, it would have required the Soviet Union to eliminate the SS-16 mobile ICBM, to curtail production of the SS-17, 18 and 19 fixed ICBMs and to forego the deployment of 400-500 MIRVed missiles, while the United States would have given up no MIRVed ICBMs and abandoned only the Minuteman X, still on the drawing board. Moreover, the U.S. proposals were not only markedly disruptive of ongoing Soviet programs but also would have handicapped the Soviet Union in achieving a capability comparable to that of the United States to strike at military targets by:

1. Placing severe limitations on the number of ICBMs (and especially MLBMs—modern large ballistic missiles);

2. Constraining flight testing of missiles, a measure which would, under present circumstances, have more of an adverse effect on the Soviet Union than on the United States;

3. Removing all limits on the number of cruise missiles the United States could deploy (or give to its allies to deploy), a factor of particular importance as these missiles, while slower in response time, are supposed to be more accurate than ICBMs.

And while these measures might help achieve U.S. aims of delaying the time when its ICBMs would become vulnerable, thus enhancing strategic stability by our definition, it is scarcely likely to do so from the Soviet perspective.

Moreover, the "Comprehensive Option" represented, in Soviet eyes, a retreat from the Vladivostok Agreement

in that it called for much deeper cuts in Soviet missiles than had been set by that Agreement, for new constraints on the modernization of strategic nuclear forces, and for a ban on new weapons. Thus it is understandable that the Soviet Union reacted angrily to the "Comprehensive Option" that, it charged, was aimed at "achieving unilateral advantages for the U.S."[18]

Nor did the alternative suggestion that the Soviet Union accept the Vladivostok Agreement without constraints on either cruise missiles or Backfire bombers receive a warm welcome, partly because, in Gromyko's words, the Americans "called a non-strategic plane a strategic plane" but largely because this proposal would "give a green light to the production and deployment of American cruise missiles."[19] And cruise missiles make a considerable difference in strategic nuclear capabilities, especially with respect to attacks on hard targets.

All this is not to say that the Soviets are on the side of the angels; they have their own (sometimes antithetical) goals to achieve and maintain a pronounced silence with respect to areas in which they have advantages, as in the size and throw weight of ICBMs. Nor would the "Comprehensive Option" have been without advantages to the U.S.S.R. in that it would have left it with a greater advantage in counterforce capabilities than if the United States had deployed the M-X.[20] Nevertheless, the net effect of the Carter administration's proposals was to further chill U.S.-Soviet relations, already affected by such developments as that Administration's emphasis on human rights, and to delay for some months the prospect of agreement on strategic arms limitations.

If and when these come, they may well (as defenders of the Administration maintain) go beyond the Vladivostok Agreement; whether they go beyond what might have been obtained had the Carter administration accepted the results of Vladivostok (as interpreted and applied in the negotiations conducted by the Ford administration) is perhaps another matter. And whether any agreement ultimately reached will achieve U.S. arms control objectives with respect to the maintenance of the strategic balance is open to question.

Arms Control and the Strategic Balance. There is general agreement among U.S. officials, past and present, that the strategic balance has shifted over the last 10 years more in favor of the Soviet Union, i.e., that both its absolute and its relative capabilities to wage strategic nuclear war are greater now than they were then. There is equally general agreement that further shifts in the strategic balance may be dangerous, for a variety of reasons:

1. They may give the Soviet Union the capacity to initiate a disarming strike that, even if it is effective only against bombers and ICBMs, could significantly degrade U.S. retaliatory capabilities—especially against such hard targets as submarine pens, ICBM silos, etc.;

2. They may give the Soviet Union an absolute or a relative advantage in the ability to inflict damage on political and economic targets, thereby making the choice of war a more reasonable decision than if the reverse were true. (It is in this context that the scope and the effectiveness of Soviet civil defense programs have aroused so much concern);

3. Further shifts in the strategic balance may, even if they do not result in such dire outcomes, create a situation in which the Soviet Union could believe that striking first could be preferable to striking second, a situation that could induce instability in time of crisis;

4. In these and other ways, such shifts may not only weaken the credibility of the U.S. deterrent but may also affect perceptions of power, thereby giving the Soviet Union an advantage in

negotiations, an enhanced ability to exert pressure on the United States and its allies, or even greater assurance that it can take risky actions without undue fear of consequences.

There is also widespread agreement among officials that the United States, in order to obviate these undesired ends, must maintain "essential equivalence" with the Soviet Union,[21] lest the outcomes described above materialize, and that the attainment of this and other U.S. objectives require a highly survivable TRIAD, capable both of inflicting "unacceptable damage," whatever that may be, and of responding flexibly to direct and indirect aggression by various kinds and levels of attacks on both military and nonmilitary targets, in and out of the Soviet Union. Where differences arise these are, as former Secretary of Defense Rumsfeld said, with respect to the kinds of capabilities required to deter[22] and in opinions concerning the contribution SALT can and should make to deterrence.

Deterrence and SALT. During the Kennedy and Johnson administrations, when Secretary of Defense McNamara dominated defense decisionmaking, it was decided that the destruction of one-fifth to one-fourth of the Soviet population and 50 percent of Soviet industrial capacity would constitute unacceptable damage.[23] This in turn would have required the devastation of some 100 Soviet cities, in the course of which as many as 50 to 60 million people might have been killed. When Mr. Nixon came to power, he and his associates decided that this did not constitute "essential equivalence," which required that the United States possess the ability to inflict a level of damage not significantly less than the level of damage the U.S.S.R. could inflict on the United States[24]—a decision that would (because of the denser concentration of population and industry in American cities) have required attacks on some 1,000 Soviet cities, with the probable deaths of over 100 million people. So far as is known, Mr. Schlesinger did not alter this requirement but he did add to it one for "flexible options," i.e., for the delivery of less than all-out attacks against a variety of targets, including Soviet weapons sites, and *his* successor, Mr. Rumsfeld, went still further, declaring that assured destruction should be measured

> —by the size and composition of the enemy's military capability surviving for postwar use;
>
> —by his ability to recover politically and economically from such an exchange.
>
> If the Soviet Union could emerge from such an exchange with superior military power, and could recuperate from the effects more rapidly than the United States, the U.S. capability for assured retaliation would be considered inadequate.[25]

It is obvious that each successive change increased the requirements for strategic nuclear forces, especially as Schlesinger and Rumsfeld envisioned large-scale second strikes against such hardened point targets as missile silos, communications centers and command posts. It is equally obvious that such requirements could be met by strategic arms limitations only if:

1. SALT could drastically reduce Soviet first strike counterforce capabilities, while those of the United States remained high, an approach that led one ex-U.S. official to say that the task of arms control was to reduce Soviet attack capabilities while retaining our own;

2. SALT imposed only minimal controls, which would allow the United States (as well as the Soviet Union) to multiply hard target kill capabilities.

Because the Soviets are neither philanthropists nor fools, this latter approach became the only feasible one.

Although President Carter has endorsed the concept of "essential equivalence" and has pledged that he will "protect the strategic balance,"[26] he has left it to his Secretary of Defense to spell out the implications of these policies. In his first Annual Report to the Congress, Mr. Brown defined essential equivalence as

> the maintenance of conditions such that:
> —Soviet strategic nuclear forces do not become useable instruments of political leverage, diplomatic coercion, or military advantage;
> —Nuclear stability, especially in a crisis, is maintained;
> —Any advantages in force characteristics enjoyed by the Soviets are offset by U.S. advantages in other characteristics; and
> —The U.S. posture is not in fact, and is not seen as, inferior in performance to the strategic nuclear forces of the Soviet Union.[27]

In a return to the lower levels established by McNamara (under whom Brown once served) the Secretary of Defense defined assured destruction as "the capability at all times to inflict an unacceptable level of damage on the Soviet Union, including destruction of a minimum of 200 major Soviet cities."[28] However, he went on to say that

> Assured destruction cannot be the only response available to the President . . . we must have the flexibility to respond at a level appropriate to the type and scale of his [the enemy's] attack.
>
> As part of that flexibility, we must be able to launch controlled counter-attacks against a wide range of targets—including theater nuclear and conventional forces, lines of communication, war-supporting industry, and targets of increasing hardness: from aircraft runways and nuclear storage sites to command bunkers and ICBM silos. It should be added that a great many of these facilities—including air fields and ICBM silos—could remain priority targets for a second-strike.[29]

If Brown's statements reflect the views of the President, as presumably they do, an outsider can conclude only that the Carter administration has made relatively little change in the requirements for deterrence—and consequently in the requirements for strategic nuclear forces. True, the levels of damage to Soviet society have been reduced below those set by Brown's predecessors; and with them, presumably, the number of secure SNDVs allocated to that component of "assured destruction." However, the continued support for "essential equivalence," and particularly for that part of this concept requiring that the U.S. force posture "is not seen as inferior in performance to the strategic nuclear forces of the Soviet Union," means that post-SALT forces must be higher than purely military tasks may require.[30] And the insistence that these tasks must include the ability, in a second strike, to target "a great many of these Soviet [military] facilities—including air fields and ICBM silos . . . ."[31] means that any SALT agreement must both preserve certain kinds of U.S. capabilities and insure that large numbers of SNDVs are retained.

SALT and War-Fighting Capabilities. Although Brown discusses only retaliatory strikes against the U.S.S.R., this is not the only mission assigned to U.S. strategic nuclear forces. Their assigned tasks seemingly include:

1. Strikes against targets in the theater of operations, either as a complement to or as a substitute for tactical nuclear forces, or as an indication of U.S. intent.

2. Attacks on targets that these tactical nuclear forces cannot reach, such as Soviet MR/IRBMs and

medium bombers deployed in the homeland.

3. Employment against other military targets inside the Soviet Union, including, as Secretary of Defense Brown suggests, "lines of communication, war-supporting industry and targets of increasing hardness: from aircraft runways and nuclear storage sites to command bunkers and ICBM silos . . . ."[32]

And they certainly include second-strike counterforce attacks against residual Soviet SNDVs, in order to insure an American advantage in relative force size, following a Soviet attack.[33]

Granted, these missions do not include that of developing the capacity for a first-strike disarming attack, a capability which Brown, like his predecessors, eschews. If, however, the number of silos and other hard targets to be attacked in a second strike require even a fraction of the 2,000 plus warheads needed for such a disarming strike,[34] the total number of SNDVs that the United States must maintain will remain high indeed--especially since not only fixed ICBMs but some percentage of the aircraft carrying the 3,000 plus ALCMs the United States is planning to procure may be vulnerable to Soviet attack.

Whether the United States should seek to maintain the capability for large-scale second-strike counterforce attacks is open to debate; following attacks of the magnitude of those that the Soviet Union can launch, and the range of targets at which it presumably would strike, it is questionable whether U.S. success in knocking out airfields on which a few laggard bombers might be based, or in destroying silos from which additional missile might be launched, perhaps after several days devoted to reloading, would be all that meaningful. What is not debatable, however, are the implications for SALT of continued adherence to a doctrine calling for extensive combat capabilities, by either side. Such adherence would mean:

1. A reluctance to make substantial cuts, especially in MIRVed ICBMs, on which the United States relies heavily (and the U.S.S.R. even more heavily) for accurate attacks against time-urgent hardened targets;

2. Difficulty in imposing constraints on the modernization of existing weapons, especially where such modernization would increase the number of warheads, improve their accuracy, or otherwise contribute to hard target kill capabilities;

3. Problems in heading off new weapons that would promise to enhance these capabilities, as would cruise missiles and such highly accurate SLBMs as Trident II;[35]

4. Continued threats to strategic stability.

SALT and Strategic Stability. Strategic stability may be said to exist when neither the United States nor the U.S.S.R. has such an edge in nuclear delivery capabilities as to make the initiation of strategic nuclear war an acceptable option and when neither country has any incentive to preempt in time of crisis. The first condition is usually related to the capacity for inflicting assured destruction, already discussed, and involves such questions as the overall effectiveness of damage-limiting strikes (on all components of strategic nuclear forces), the efficiency of air defenses, capabilities for conducting antisubmarine warfare operations, the value of civil defense programs, *et cetera*. The second consideration relates more directly to the possibility of degrading the land-based component of strategic nuclear forces, thereby:

1. Reducing a country's ability to launch counterattacks against certain kinds of targets deemed important, such as weapons sites;

2. Conceivably putting that country at a disadvantage in subsequent negotiations, wherein that adversary

would have residual capabilities unavailable to the country which was on the receiving end of a first strike.

Previous Administrations attached considerable importance to maintaining strategic stability under both of these definitions, through SALT as well as through unilateral measures. Thus Ambassador Smith, at the conclusion of the negotiations for SALT I, stated that "an objective of the follow-on negotiations should be to constrain and reduce on a long-term basis threats to the survivability of our respective strategic retaliatory forces"[36]—a view repeated by President Nixon the following year.[37] As is known, Schlesinger was particularly concerned about the vulnerability of U.S. ICBMs to increasing Soviet counterforce capabilities, a situation that he feared could make a partial disarming strike a valid choice for the Soviet Union, whether or not the United States was threatening attack. And Rumsfeld, though less explicit, referred frequently to growing Soviet capabilities to launch a disarming strike and noted the necessity for precluding the Soviet Union from attaining a position in which it could (or could seem to) have "a meaningful advantage."[38]

Despite these concerns, the successive proposals advanced in SALT by the Nixon and Ford administrations were not likely to preclude the Soviet Union from acquiring either the capability to launch a partial disarming strike or that of inflicting disproportionate damage on the United States, the former being a function of the number, the size, and (in the long run) the accuracy of SNDVs, the latter a combination of these factors and the vulnerability of the United States to nuclear attack. The Carter administration, whether from zeal or from ignorance, rushed in where its predecessors had feared to tread, with the "Comprehensive Option" already described.

It is hard to tell whether this approach reflected the same concern with threats to strategic stability manifested by its predecessors; at any rate, references to strategic stability in the Secretary of Defense's posture statement were few and muted.[39] Because Brown did indicate a desire to achieve that stability "through a combination of specific, equitable and verifiable arms control agreement and unilateral force modernization," it is fair to infer that this objective motivated not only him but other members of the Carter administration.[40]

Granting that stability is not the sole objective of strategic arms limitations, which may have other ends ranging from that of maintaining certain kinds of attack capabilities to that of assuaging particular interest groups, it may be worth looking at the extent to which the proposals of the Carter administration might achieve it. Chart 1 shows U.S. and Soviet strategic nuclear forces, now and in 1985, under four separate assumptions: no arms control, the Comprehensive Option, Vladivostok with cruise missiles, and the Current Draft Agreement and lists such static indicators as the number of SNDVs, their throw weight, the number of reentry vehicles, etc. It also lists the capacity to destroy hard targets, which is a function of the yield of the warheads, their accuracy and the hardness of the target(s).[41]

1. Under any indicator, Soviet ICBMs contribute much more to Soviet capabilities than do U.S. ICBMs to those of the United States—which may help explain why the Soviet Union has resisted deep cuts in its land-based missile forces;

2. When bomber payloads are counted in, even on a conservative basis (i.e., more than Mr. Nitze would credit but less than Mr. Trofimenko would ask) throw weight favors the United States rather than the U.S.S.R., as is commonly assumed;

3. Under any proposal, the United States is ahead in the number of war-

heads and probably (though it cannot be shown here) in the accuracy with which these can be delivered but behind in the size of warheads—and hence in megatonnage and megaton equivalents.

If one calculates the results of a nuclear exchange or looks at the numerous (and differing) calculations of others,[42] three further points can be made:

1. In any of the five cases described, both sides retain the ability to destroy upwards of 200 cities in retaliatory strikes;[43] thus if one believes that the prospect of 80 to 120 million dead, and the loss of two-thirds to four-fifths of industrial floor space, suffices for deterrence, we have strategic stability—by one definition;

2. These levels of damage in a second strike are inflicted largely by submarine-launched ballistic missiles and cruise missiles; thus either side can, by striking first, reduce drastically the capabilities of land-based strategic nuclear forces. By that definition, strategic stability does not exist;

3. The United States is better off now than it will be in the future, even under 1985, Case 2: the "Comprehensive Option."

This last point should come as no surprise to anyone following the trends and projections in Soviet ICBM forces that will, over time, further multiply the number of RVs and increase their accuracy, while maintaining fairly sizable warhead yields. As Secretary of Defense Brown said, "the 'Comprehensive Option' of March 30 would delay substantially the time when fixed ICBMs become vulnerable"[44] but neither he nor anyone else has argued that invulnerability can be extended indefinitely. Thus, so far as one type of strategic stability is concerned, the United States either must accept the fact of instability (which, as Brown says, "would not be synonymous with the vulnerability of the United States, or even of the strategic deterrent")[45] or attempt the difficult task of insuring strategic stability through future arms limitations or build other weapons which are not so vulnerable—a move that may inhibit, if it does not rule out, meaningful progress in SALT.[46]

Problems in SALT. Negotiating SALT II. Both sides have made concessions since last March, the United States with respect to the depth of cuts to be made in strategic nuclear delivery vehicles and the limitations to be placed on modernization, the U.S.S.R. with respect to the ranges of ALCMs, the testing of GLCMs and SLCMs at ranges greater than 600 kilometers and the ceilings to be imposed on MIRVed ICBMs and SLBMs. Reportedly, the United States and the U.S.S.R. have come close to agreement on four documents:

1. A treaty of 8 years duration that would embody understanding reached covering ceilings on SNDVs, restrictions on MIRVs, etc.;

2. A 3-year protocol covering temporary limitations that are not ready for longer term resolution, such as new types of ICBMs, mobile ICBMs and cruise missiles;

3. A Joint Statement of Principles setting guidelines for continuing negotiations on strategic arms limitations;

4. A separate set of assurances covering restrictions on the Backfire bomber.

Still at issue are a number of points that could affect the likelihood and timing of an agreement, if not its substance. These include:

1. Disagreement (within the United States Government as well as with the Soviet negotiators) whether the allowable range of ALCMs should exceed 2,500 kilometers, to allow for zigzags while en route to targets, and if so, by how much;

2. Differences over whether the agreed restrictions on the Backfire bomber should be issued in the form of a unilateral Soviet declaration or incorporated in a signed agreement;

3. Questions whether the new ICBMs allowed each side should be limited to one without MIRVs (as the Soviets propose) or one with MIRVs (as the United States suggests) and whether the new SLBM allowed each party should, for the United States, be the Trident 1 (as the Soviet Union wishes) or the Trident 2;

4. Whether there should be a ban on the development of depressed trajectory weapons, that could, because of their shorter flight (and warning) time, threaten the survivability of land-based aircraft.[47]

None of these differences appears insoluble but equally, none is certain of resolution. At the moment these differences are more likely to delay than to halt progress on SALT, especially as the Soviet Union is reportedly eager to conclude an agreement.[48]

Ratifying SALT II. Another problem that may have contributed to the slow rate of progress on the negotiations is potential opposition to the terms of the "intermediate Agreement" as it is now developing. To some extent this opposition arises from the fears of the NATO allies that they will be denied cruise missiles and/or access to the technology required to build them on their own.[49] They have not been wholly persuaded by U.S. arguments that the deployment of GLCMs and SLCMs is precluded only for 3 years (during which time these can be fully developed and their deployment studied) because they fear that the United States may, at the end of 3 years, trade off continued restraint for further Soviet concessions on strategic nuclear forces. And the allies are further perturbed by the seeming U.S. willingness to accept a proviso in SALT II that they will not circumvent the intent of the agreement with respect to cruise missiles by transfers of technology to other powers.[50]

The concerns of the Western Allies are important not only in themselves, in that they can cause hesitancy on the part of U.S. officials, but also in that they reinforce the opposition of important political elements in the United States. Although a poll taken last year showed 77 percent of the people want a SALT agreement, and that only 8 percent are opposed to one,[51] their answers were based on its general desirability, not on specific terms of agreement—and some were skeptical about the probable nature of those terms. Among key members of Congress, some of whom have been briefed on the terms of the "Current Draft Agreement," reaction has purportedly been much more adverse. Senator Jackson, for one, has argued that the proposed agreement would "result in an ever-increasing arms spiral"—largely because it would not end threats to Minuteman ICBMs—and has, along with others, expressed concern lest the 3-year protocol precluding the deployment of M-X be extended, with the result that the United States would be unable to utilize mobile ICBMs. Senator Baker, the Republican leader of the Senate, indicated that "there's a malaise, a sense of concern about it in the Senate" and expressed doubt whether Carter could get a two-thirds vote in approval of the forthcoming agreement; subsequently he indicated that he personally might oppose it.[52] Other critics, such as Mr. Nitze, have expressed alarm over the residual Soviet advantage in ICBM throw weight, and have expressed doubt whether the United States will, at the end of the 3 years covered by the protocol, be able to obtain further concessions from the Russians without trading off the cruise missile.[53] Administration officials reportedly acknowledge that Carter may have trouble getting congressional approval—in part because of the issue of ICBM vulnerability, in part because of his apparent retreat from the "Comprehensive Option" proposed in March.[54] And though these officials have put forward counterarguments, notably to

the effect that while no conceivable agreement could insure Minuteman survivability, the duration of that survivability—and the position of the United States in general—would be better off with an agreement than without it, they acknowledge the difficulty of making further concessions to the U.S.S.R., that twice has charged that the opposition of "Congress, the Pentagon and the military-industrial complex" is responsible for lack of progress in completing an agreement.[55]

Other Problems. Even if one assumes that something close to the "Current Draft Agreement" as portrayed here is signed and ratified, this will not end all problems with SALT as many issues may be deferred until the end of the 3-year protocol and the beginning of negotiations to implement the anticipated "Statement of Principles." Though the number of these problems might be legion, this paper will focus on only two related problems: inhibitions to modernization and reductions in force levels. As noted earlier, the "Comprehensive Option" put forward by the United States called for a number of inhibitions to the modernization of weapons, such as barring the modification of existing ICBMs; precluding the development, testing and deployment of new ones; barring mobile ICBMs; limiting flight tests of SLBMs and ICBMs, and establishing range limitations on cruise missiles. Although one of these (limiting flight tests) has been dropped, and another (barring mobile ICBMs) is now opposed by the United States, the "Intermediate Agreement" will probably provide for a 3-year freeze on the deployment of such ICBMs, will limit the number of new (untested) ballistic missiles that can be developed and will restrict both the ranges and the modes of deployment of cruise missiles. These provisions may, however, create as many problems for the United States as they solve—at least if present strategic doctrine is continued unchanged into the future.

These problems arise from the fact that even with current accuracies and probable yields the Soviet ICBM force will, once the deployment of SS-17s, 18s and 19s is completed, be capable of launching a disarming strike;[56] indeed, the SS-19 alone could probably provide the means to this end. Thus, the specter of "Minuteman vulnerability" will continue to haunt our decisionmakers—as, indeed, it would have even if the restrictions proposed in the "Comprehensive Option" had been adopted. In the absence of SALT, the United States could markedly reduce that vulnerability by building mobile ICBMs, could substitute longer-range (or forward-based) GLCMs for ICBMs, or could deploy Trident II. At the moment, however, all three of these options are likely to be ruled out temporarily by the protocol to the projected treaty, and the subsequent choice of any one could have a major effect on SALT III.

The great advantage of a mobile ICBM, such as the M-X, is that it would insure the maintenance of a survivable, communicable, controllable force capable of rapid employment against time-urgent hard targets. Moreover, the programmed M-X is twice the size of MN-3, has more than twice the thrust (enabling it to carry 7-14 RVs, each more powerful than the 170 KT warhead now carried by MN-3) and is potentially capable of being delivered within 100 yards of the target, compared to the 300-yard CEP of Minuteman III.[57] Thus, the deployment of M-X as presently conceived would give the United States a greatly enhanced counterforce capability, in either a first or a second strike.

This indeed is one of the criticisms of it, namely that this capability may appear so threatening to the Soviet Union that the latter country would preempt in time of crisis. Moreover, its deployment would probably induce the

U.S.S.R. to proceed with parallel developments, such as the deployment of a MIRVed version of the SS-16 mobile ICBM—and perhaps of a larger, more powerful successor. In one sense, this would only restore the "balance" and could even be construed as "stabilizing"; however, it would markedly intensify the arms race. Additionally, it would make verification of the numbers of missiles on either side almost impossible—at least unless the United States and the U.S.S.R. agreed to very intrusive inspection systems. Thus, entirely aside from its costs (which are formidable) U.S. decisionmakers must consider the potential consequences for SALT of choosing, when the 3-year protocol expires, to proceed with M-X.

The second alternative, that of developing long-range GLCMs[58] that would depend for security on dispersal and concealment as well as on mobility, might seem less threatening in that the time required for each missile to reach its target makes it potentially less useful in a first strike counterforce attack. Nor would GLCMs, as presently designed, be able to carry multiple warheads so that even larger numbers would be less effective than the M-X ICBM. However, its relative cheapness would make possible the production of these large numbers at much lower cost than Minuteman X, and the disadvantage of time could be compensated in part by deploying GLCMs overseas—a move that might please the NATO allies, especially if these were given some degree of control over the targets and the launching of GLCMs. This latter choice would, however, undoubtedly increase the virtual Soviet paranoia over "forward based systems," on that account alone prejudicing SALT. So, moreover, would the problem of verification. Thus this option also poses problems for the Carter administration—among them being the additional one that technology may extend with weaponry, and enable new countries to pose potential threats to the United States.

The third choice, SLBMs, is less advantageous, in that these are less responsive (because of the difficulty in maintaining continuous communication) and less rapid, because they may not be in range of the chosen target area. They may also be less survivable than mobile ICBMs or GLCMs, though the breakthrough in antisubmarine warfare that would make missile submarines vulnerable has been projected for 15 years and would, according to one estimate, take at least 15 years to materialize if it did develop.[59] Since, however, a missile like the Trident II could, according to Secretary of Defense Brown, "provide the potential for a capability against the entire Soviet target spectrum, in a highly survivable system . . . ,"[60] it cannot be ignored.

The difficulty here is that the decision to go ahead with a more capable SLBM, on the ground that it is necessary to enhance U.S. counterforce capabilities, may reopen the quest of the Soviet Union for a similar expansion of its capabilities—thereby jeopardizing efforts to ban depressed trajectory missiles, which could threaten the survivability of U.S. bombers. And while one cannot say that the choice of an advanced SLBM would be as prejudicial to strategic arms limitations as would the other two, it would have an effect.

At some stage, moreover, the U.S. program to improve its hard-target kill capabilities is bound to run counter not only to attempts to inhibit qualitative improvements but also to efforts further to reduce force levels. This is true in part because assured survivability may require a multiplication of aiming points—and hence large numbers of launch vehicles. It is more largely true, however, because these launch vehicles must strike at numerous and varied targets, in either a first strike or a second, and this requirement increases the number of SNDVs that must be

maintained—even though some of these, like wide-bodied transports, could carry 50-100 RVs. As long, therefore, as the United States tries to maintain significant combat capabilities, it will find it hard to reduce its delivery vehicles by the 50 percent to which President Carter aspires,[61] and even harder to cut the number of MIRVed launchers by that percentage; in fact, even the "Comprehensive Option" would not have reduced MIRVed launchers by more than 18 percent—and would have reached this lower level only by not counting bombers armed with ALCMs.

However, an even greater obstacle to major reductions in SNDVs is the policy of "essential equivalence" that aims at insuring that "political perceptions [of the strategic balance] are in accord with the military realities . . . ."[62] This policy seems reasonable until one looks both at its bases and its consequences. First of all, there is little hard evidence to support the view that superiority in strategic nuclear forces is translatable into political advantages; in fact experts disagree on this issue, with former Secretary of State Kissinger saying "What in the name of God is strategic superiority? What is the significance of it politically, militarily, operationally, at these levels of numbers? What do you do with it?"[63] A second point is that there is even less evidence that perceptions of the strategic balance weigh as heavily on our allies as do other factors, ranging from U.S. economic policy to the attempt of the United States to enhance détente; for example, one senior West German military officer termed the June 1973 agreement between Brezhnev and Nixon on the renunciation of nuclear war "a worse betrayal than Munich."[64] A third point to note is that the problem of persuading people of the existence of "essential equivalence" is very difficult, partly because of the difficulty of applying static indicators,[65] partly because of the fact that preconceptions and biases affect judgments. (For example, Mr. Nitze, no tyro in defense matters, is apparently unpersuaded that bomber payloads, even when increased by some thousands of ALCMs, offset the Soviet advantage in ICBM throw weight.)

A fourth point, and perhaps the most relevant, is that attempts to maintain "essential equivalence" almost inevitably wind up as attempts to establish "essential superiority," i.e., to acquire an edge over the U.S.S.R. that assures even the most doubting of Thomases that the United States is "equal" to its adversary. And even when this extreme is not pursued, the effort requires substantially larger and considerably more costly strategic nuclear forces than would other concepts of deterrence.[66] Needless to say, unless the Soviet Union attaches the same value to weapons systems as does the United States, and hence comes to the same conclusion concerning "essential equivalence," the attempt to acquire this is likely to make strategic arms limitation agreements much harder to reach—and much more expensive if and when they are reached.

Obviously, this problem would not exist if the Soviet Union either structured its forces the same way that the United States has done (which it doesn't) or shared American concepts of deterrence, which it doesn't; instead, Soviet leaders apparently believe that nuclear war can be deterred only if one possesses the forces needed to "win" such a war. Moreover, they seem also to believe that superiority in the "correlation of forces" is required to insure U.S. acceptance of arms control, to promote the relaxation of tensions, and to enable the U.S.S.R. to promote successfully and safely that transformation of the world that it envisions as taking place under the umbrella of "peaceful coexistence."[67] Thus, Soviet concepts, like American ones, may create problems as we go further into strategic

arms limitations—not least of all with respect to reductions in strategic nuclear forces.

What of the Future? It is apparent that the Carter administration is faced with a number of difficult problems, both in its current efforts to arrive at a satisfactory SALT II and in looking toward SALT III. Some of these problems (like the vulnerability of the Minuteman force) are the almost inevitable results of technological innovations of the past 20 years and of decisions made a decade ago—by both U.S. and Soviet leaders. Others may derive from the Administration's own impetuosity in making to the Soviet Union such a far-reaching proposal that the virtually inevitable fallback toward a more negotiable agreement can be portrayed as a retreat—or even as a betrayal of principle. Some problems, like those deriving from concepts of deterrence fashionable among U.S. political elites, and many of the strategic doctrines currently in effect, have been inherited from predecessor Administrations. Here the record is mixed. The Carter administration has changed some of them (such as the concept that deterrence requires a U.S. edge in the capacity for assured destruction—and hence, because the asymmetries in the distribution of people and industry in the United States and the U.S.S.R., an even larger edge in survivable forces), thereby gaining "elbowroom" in the SALT negotiations. Others, such as the need for "essential equivalence," they have accepted in part but not in whole with consequent implications for the numbers and types of SNDVs required—and hence for the possibility of agreement on SALT. On balance they must, at least in recent months, be credited with a more moderate position on defense requirements than their predecessors and, perhaps in consequence, with a greater willingness to push for extensive constraints on strategic nuclear forces.

It is both difficult and presumptuous for an outsider to advise the Government on arms control policy and negotiating positions, not because outside ideas or judgments are inferior to theirs but because outside information is undoubtedly much poorer. Moreover, outsiders have the luxury of detachment as they do not have to assume responsibility for persuading the U.S. Congress and the American people of the desirability of their proposals—though I would be remiss if I did not consider that factor in formulating my proposals. My first suggestion (which does not relate directly to SALT but which could have portentous consequences for future arms limitations) is that the Carter administration further examine the requirements for deterrence—a process it apparently has begun. In my view, this examination should cover:

1. A realistic justification for "essential equivalence" in terms of its importance in the eyes of our allies, its implications for political leverage, and its contribution to crisis stability. While the work at my Center[68] is not yet at a stage where one can confidently make judgments about these matters, it has gone far enough to raise doubts about conventional wisdom—for example, with respect to the importance of military power in affecting crisis outcomes;

2. The essentiality to deterrence of particular kinds of capabilities and uses of them: Is it, for example necessary to strike at civilian targets as well as military ones, or *vice versa*, in order to deter aggression?

3. Does it really matter whether one side or the other has a residual advantage in SNDVs following a first or second strike?

4. To what extent does assured destruction, of whatever level and against whatever targets, need to be proportional to the damage inflicted on the deterrer or related to the kind of damage inflicted, as in a disarming strike?

I must admit that I have no good answers to these kinds of questions, though I have been studying deterrence for more than a decade. Nor can I rule out the possibility that a reexamination of deterrence may result in larger and more diverse requirements for strategic missile forces, given current Soviet beliefs, to which most of our thinking about deterrence seems unrelated. Because, however, the Soviets themselves have argued that "military détente must extend to military-strategic doctrines and concepts"[69] there may be at least a possibility of reconciling our concepts with those of Soviet leaders and arriving at conclusions more compatible with arms control and stability.

My second suggestion is that the Carter administration should, following its reexamination of deterrence, relook both at strategic doctrine (or, if you will, targeting doctrine) and force requirements—a look that is apparently already under way.[70] Pending the results of that relook the Administration should, it seems to me:

1. Avoid committing itself to any new programs that would markedly complicate SALT—as would the deployment of a mobile ICBM, even if this were not accompanied by adoption of the "Multiple Aim Point" Plan.[71]

2. Examine ways of meeting current requirements for survivable retaliatory forces with different weapons (i.e., SLBMs instead of ICBMs or GLCMs).

In the long run the United States (and the U.S.S.R.) will have to choose between the maintenance of certain kinds of strategic nuclear capabilities, and the precarious stability that goes with them, and the more largely assured stability that can come from détente and arms control. At the very least, the Administration should not make that difficult task more difficult by near-term choices based on old concepts.

My third suggestion is that the Administration agree as quickly as possible on SALT II. I am aware of the political implications of appearing to make significant concessions to the Soviet Union and the desire to assuage concern by obtaining marginal improvements that would, for example, extend Minuteman survivability another 2 or 3 years. Against this, however, must be set the probable delay in coming to agreement, during which time weapons systems programs inexorably go on; Soviet anger at this delay, which may jeopardize any agreement; and the fact that neither Soviet policies nor the individuals making them are eternal: should Brezhnev die, chances of any agreement may be small.

At the risk of rushing in where angels fear to tread, I would suggest that the Administration:

1. Settle (if it can) for range limitations on ALCMs closer to the 2,500 km already accepted by the U.S.S.R. than to the 3,250 reportedly desired by the Department of Defense, as the Air Force allegedly plans to mount ALCMs on penetrating bombers as well as on standoff transport-type aircraft.

2. Accept some restrictions on the number of ALCMs that can be carried by any one aircraft or on the total number of ALCMs authorized—a restriction that would still enable the United States to add 2,400-4,800 warheads to its arsenal.

3. Take, if necessary, less precise constraints on the Backfire bomber inasmuch as:

(a) the kinds of constraints sought (as with respect to limits on the monthly rate of production and restrictions on basing) are essentially cosmetic;

(b) the relative contribution of Backfire in a nuclear exchange is, in my opinion, marginal.[72]

This does not mean that I am in favor of resolving all debatable points in favor of the Soviets; indeed, were it possible to reopen the issue, I would, for political and psychological reasons, insist on the "right" of the United States to 308 heavy ICBMs, the number

U.S. AND SOVIET STRATEGIC NUCLEAR FORCES,[1] 1978-1985

Launch Vehicle	1978	No Agreement 1985.1	Comprehensive Option 1985.2	Vladivostok Accords 1985.3	Intermediate Option 1985.4
Titan II	54	54	0	54	54
Minuteman II	450	450	450	450	450
Minuteman III	550	700	364	550	464
	1,054	1,204	814	1,054	964
A3 Polaris	160	80	0	0	0
C3 Poseidon	496	336	336	336	336
C4 Trident I	0	160	160	160	160
D5 Trident II	0	240	840	240	240
	656	816	736	736	736
B-52 D/F	75	0	0	75	75
B-52 G/H	241	0	150	225	235
B-52 G/H (ALCM)	0	265	100	130	120[2]
FB-111 (A)	66	0	0	0	0
FB-111 H	0	165	0	0	0
	392	430	250	430	430
SNDV	2,102	2,450	1,800	2,230	2,130[3]
MIRVs	1,046	1,436	1,200	1,286	1,320
Throw-weight (000)	26,252	32,074.5	20,051.5	31,732	31,616.5
Warheads	11,182	21,172	14,062	17,482	16,136
MIRV Warheads	6,610	20,428	11,812	13,978	12,512
MT	3,994	4,530	2,987	4,593	4,939
EMT	4,442	6,860.2	4,417.3	6,536	6,054
K'.N Time Urgent	35,362	128,505.1	88,258.6	110,717.1	100,642
K'. N Total		1,442,879.5	361,858.6	604,291.5	482,962

[1]Estimates of yearly launch vehicle totals derived from: *The Military Balance: 1978-79,* International Institute for Strategic Studies, London, 1978; and Tinajero, A.A., *Projected Strategic Offensive Weapons Inventories of the U.S. and U.S.S.R.: An Unclassified Report,* CRS 77 59F, Congressional Research Service, Library of Congress.

[2]The U.S. retains the option to introduce wide-bodied cruise missile carriers to replace/supplement the B-52 cruise missile carriers.

[3]Though the U.S. under the Intermediate Option retains the right to 2,250 SNDV, it is unlikely that the total may be reached as current programs do not provide sufficient non-MIRV systems.

U.S. AND SOVIET STRATEGIC NUCLEAR FORCES,[1] 1978-1985

Launch Vehicle	1978	No Agreement 1985.1	Comprehensive Option 1985.2	Vladivostok Accords 1985.3	Intermediate Option 1985.4
SS-7	0	0	0	0	0
SS-8	0	0	0	0	0
SS-9	190	238	0	0	0
SS-11	780	800	296	0	310[4]
SS-13	60	60	0	0	0
SS-16	0	60	0	60	0
SS-17	60	462	0	462	0
SS-18	110	308	150	308	300
SS-19	200	550	514	550	560
	1,400	2,478	960	1,380	1,170
SSN-4	0	0	0	0	0
SSN-5	21	0	0	0	0
SSN-6	544	544	304	544	544
SSN-8	388	0	0	476	0
SSN-18	0	536	536	0	536
	953	1,080	940	1,020	1,080
TU-95	100	100	-	-	-
MYA-4	35	35	-	-	-
	135	135			
SNDV	2,488	3,695	1,800	2,400	2,250
MIRVs	370	1,856	1,200	1,320	1,320
Throw-weight (000)	13,695	22,817	7,851	13,354	11,033
Warheads	4,573	11,312	6,492	9,764	8,222
MIRV Warheads	2,320	9,400	6,188	7,792	7,588
MT	9,837	15,958.4	5,011.6	8,552.4	7,811
EMT	6,547	12,114.7	5,091.8	8,403.4	7,429
K',N Time Urgent	30,748	129,468.6	68,601.9	124,199.6	102,259
K',N Total					

[4]It is assumed that the Soviets will eliminate its aging bomber fleet first under a SALT imposed limit retaining ICBMs instead, although they may opt for maintenance of some bombers as the third leg of a triad.

Legend:

SNDV - Strategic Nuclear Delivery Vehicles
MIRV - Multiple Independently Targetable Re-entry Vehicles
MT - Megatonnage
EMT - Equivalent Megatons
K'N - Time Urgent: Delivered by Ballistic Missiles against Targets of Immediate Military Interest
Total: Includes Slower Cruise Missile Systems

Note: Please refer to footnote #39

which the Soviets are now authorized. Nor would I concede permanent constraints on the transfer of cruise missile technology to the allies—though I might be willing to do so for the 3 years during which the protocol held. In the best of all worlds, there would be no cruise missile and no MIRV, but as these do exist, one must consider ways of using them to enhance stability as well as ways of heading off destabilizing developments.

In this context, my final suggestion would be that the question of cruise missiles, like that of other "gray area" weapons, be taken up in a European context, if not in a larger one. The desires of West Europeans for cruise missiles stem in part from their belief that they have few or no weapons systems that could deter Soviet MR/IRBMs and medium bombers, and certainly none that could be traded off against these weapons. The feeling of these people that they have no bargaining power vis-a-vis the U.S.S.R., in arms control negotiations or outside them, is a factor that must be taken into account. In my opinion, the best way of doing so is not to arm Western Europe with cruise missiles, short-range or long-range, but to use the possibility of so doing to induce the Soviet Union to open negotiations on those weapons systems that so far have fallen between the cracks of SALT and M(B)FR. If this ultimately brings up the question of "forward based systems," or other TNDVs in Western Europe, it will at least do so in a forum wherein all relevant weapons are discussed and in which all interested parties participate, rather than in bilateral negotiations, to which the contribution of West Europeans is necessarily limited.

BIOGRAPHIC SUMMARY

Joseph Coffey is a graduate of the United States Military Academy and received the Ph.D. degree in International Relations from Georgetown University. He has served on Department of the Army, Department of Defense, State Department, and White House staffs and has been associated with the International Institute for Strategic Studies and the Institute for Defense Analysis. He is now Professor of Public and International Affairs and Director, Center for Arms Control and International Securities Studies at the University of Pittsburgh.

NOTES

1. For the emphasis on a war-winning strategy, see Donald H. Rumsfeld, *Report of Secretary of Defense Donald H. Rumsfeld to the Congress on the FY 1978 Budget, FY 1979 Authorization Request and FY 1978-1982 Defense Programs, 17 January 1977* (Washington: U.S. Govt. Print. Off., 1977), p. 68. The argument that the United States sought to achieve this capability with little regard for the implications for SALT is justified both by the kinds of proposals put forward by the United States (as at Vladivostok) and by the fact that Mr. Rumsfeld, in 21 pages of discussion on strategic nuclear forces, devotes only one page to SALT, in the course of which he denigrates the potential contributions of arms control to stability. (This document will hereafter be cited as the *Rumsfeld Report*, FY 1978.)

2. See for example, his Press Conference of 24 March 1977, reported in the *Boston Globe*, 25 March 1977, p. 1.

3. *SALT II: Problems and Prospects,* Issue Brief #IB77030, Major Issues System, Congressional Research Office, Library of Congress, 6 May 1977, pp. 2 and 3.

4. *The New York Times,* 15 April 1977, p. 6.

5. *SALT II: Problems and Prospects,* p. 4.

6. *Ibid.,* p. 7. See also Paul H. Nitze, "An Analysis of the Two U.S./Moscow SALT Proposals of March 1977" in Paul H. Nitze, et al., *The Carter Disarmament Proposals: Some Basic Questions and Cautions,* Special Reports on International Affairs, Center for Advanced International Studies, University of Miami, 1977, pp. 10 and 11.

7. For a detailed analysis, see Herbert Scoville, Jr., "The SALT Negotiations," *Scientific American*, August 1977, pp. 24-31.

8. "A.A. Gromyko's Press Conference," *Pravda*, 1 April 1977, p. 2, translated and reprinted in the *Current Digest of the Soviet Press (CDSP)*, 27 April 1977, pp. 7 and 8.

9. Department of State, Bureau of Public Affairs, Office of Public Communication; Special Report No. 46, July 1978, *The Strategic Arms Limitation Talks*, p. 8.

10. For details of these and other differences, see p. 17.

11. L.I. Brezhnev, speech of 5 April 1977, translated and reprinted in *CDSP*, 4 May 1977, p. 10. See also the report of the meeting between Brezhnev and U.S. Ambassador Toon in *Pravda* for 16 March 1977, appearing in *Soviet World Outlook*, December 1977, p. 4.

12. Rep. Les Aspin, "SALT II or no SALT," January 1978, mimeographed, Fig. 2, p. 9.

13. *Pravda*, 10 July 1976, cited in *Soviet World Outlook*, 15 July 1977, p. 2.

14. See, for example, Henry Trofimenko, "The 'Theology' of Strategy," *Orbis*, Fall 1977, especially pp. 503-504.

15. See, for example, C.G. Jacobsen, "Soviet Attitudes to 'Controlled Strategic Conflict'" in *Current Comment 10*, The Norman Patterson School of International Affairs, Carleton University, Ottawa, Canada, May 1976, especially pp. 15-16. This point is made not only by academic analysts but also by specialists from the Central Intelligence Agency, for which see *Hearings Before the Subcommittee on Priorities and Economy in Government*, Joint Economics Committee, Congress of the United States, Part II, 24 May and 15 June 1976, p. 68. (For a somewhat different view, which links Soviet combat capabilities to the maintenance of a stable military balance and emphasizes that the measures taken should be viewed more as a hedge against the failure of deterrence than as an end in themselves, see Raymond L. Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," *International Security*, Summer 1978, pp. 112-114.)

16. *Pravda*, 14 April 1977, p. 4, translated and reprinted in *CDSP*, 11 May 1977, p. 1.

17. See the statements of these objectives in *U.S. Strategic Nuclear Forces: Deterrence Policies and Procurement Issues*, Budget Issue Paper, Congressional Budget Office, Congress of the United States, April 1977, pp. 3-4 and 9-10.

18. "A.A. Gromyko's Press Conference," p. 7. See also the *Pravda* editorial "Strategic Arms Limitation: A Problem that Can and Must be Solved," 14 April, pp. 4-5, *CDSP*, 11 May 1977, pp. 1-4. Cautious agreement with this opinion was expressed by Jan M. Lodal, "Carter and the Arms Talks," *The New York Times*, 12 April 1977, p. 29 and by David Linebaugh, "Seeds for SALT Progress," *The Christian Science Monitor*, 28 April 1977, p. 27. Mr. Nitze in his piece, "An Analysis of the Two U.S./Moscow SALT Proposals of March 1977," p. 15 argues "had the U.S. Comprehensive Proposal been accepted by the U.S.S.R., it would have favored the Soviet side . . . ," but he is almost alone in this judgment.

19. "A.A. Gromyko's Press Conference," p. 7.

20. In this connection, see the Report of Rep. Samual S. Stratton, "Strategic Missile Counterforce Capability: [The] United States vs. The Soviet Union," mimeograph, n.d., p. 14.

21. *Rumsfeld Report*, FY 1978, p. 74; Harold Brown, Secretary of Defense, *Department of Defense Annual Report, Fiscal Year 1979*, 2 February 1978, mimeograph, p. 5 (hereafter cited as *Brown Report*, FY 1979). President Jimmy Carter, *Message to Congress*, 19 January 1978, extracted in *Selected Statements*, 78-3, 1 March 1978, p. 6. Actually the concept of, and concern about, essential equivalence originated in the Nixon administration and may be found, *inter alia*, in *U.S. Policy for the 1970s: Shaping a Durable Peace, Report to the Congress by President Nixon*, 3 May 1973, p. 195.

22. *Rumsfeld Report*, FY 1978, p. 68.

23. *Statement of Secretary of Defense Robert S. McNamara Before the Senate Armed Services Committee on the Fiscal Year 1969-73 Defense Program and 1969 Defense Budget*, 22 January 1968, mimeograph, p. 30.

24. U.S. Congress, Senate, Committee on Foreign Relations, Subcommittee on Arms Control, International Law and Organization, 91st Cong., 2nd Sess., *Hearings on ABM, MIRV, SALT and the Nuclear Arms Race* (Washington: U.S. Govt. Print. Off., 1970), p. 308.

25. *Rumsfeld Report*, FY 1978, p. 68.

26. "Remarks at Wake Forest University," 17 March 1978, *Selected Statements*, 78-4, 1 April 1978, p. 61.

27. *Brown Report*, FY 1978, pp. 5 and 6.

28. *Ibid.*, p. 55.

29. *Ibid.*

30. This results from a number of factors:

a. as former Secretary of Defense Rumsfeld said, such static indicators as numbers of

warheads, throw-weight, etc., are more likely to influence perceptions than are more detailed analyses. (*Rumsfeld Report*, FY 1978, p. 74.)

b. these static indicators are not only imperfect reflections of strategic capabilities but have different implications for different kinds of targets. (Thomas A. Brown, "Number Mysticism, Rationality and the Strategic Balance," *Orbis*, Fall 1977, especially pp. 489-490.)

c. given asymmetries in U.S. and Soviet strategic nuclear postures, these indicators will always show imbalances: thus, the United States may claim a "throw-weight gap" and the Soviet Union a "warhead gap"—even within conditions of strategic parity.

d. it is almost impossible to persuade critics that advantages in one area offset disadvantages in another.

31. *Brown Report*, FY 1979, p. 55.

32. *Ibid.*

33. *Ibid.*, pp. 103-105.

34. A 1975 estimate by the Department of Defense indicated that 2,158 nuclear weapons would be required for a disarming strike against the Soviet Union (U.S. Senate, Committee on Foreign Relations, Sub-Committee on Arms Control, International Organization and Security Agreements, *Analyses of Effects of Limited Nuclear Warfare* (Washington: U.S. Govt. Print. Off., 1975), p. 149, cited in Trofimenko, p. 513.)

35. For the hard target kill capability of cruise missiles see A.A. Tinajero, *Cruise Missiles: U.S. Programs*, Issue Brief #IB76018, Major Issues System, Congressional Research Service, The Library of Congress, 29 April 1977, p. 3. For the projected accuracies of Trident II see *U.S. Strategic Nuclear Forces: Deterrence Policies and Procurement Issues*, pp. 45-46.

36. U.S. Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements, Text and History of Negotiations*, February 1975, p. 146, quoted in *SALT and the U.S. Strategic Forces Budget*, Background Paper No. 8, Congressional Budget Office, Congress of the United States, 23 June 1976, p. 9.

37. *U.S. Policy for the 1970s: Shaping a Durable Peace*, 3 May 1973 (Washington: U.S. Govt. Print. Off., 1973), pp. 202-204, cited in *SALT and the U.S. Strategic Forces Budget*, p. 10.

38. *Rumsfeld Report*, FY 1978, pp. 71-72. See also the statements by Malcolm Currie, Director of Defense Research and Engineering, who expressed similar concern about the instabilities deriving from a partial disarming strike by the Soviet Union. *Program of Research, Development, Test and Evaluation*, FY 1978, mimeograph, pp. III-3 and III-5.

39. *Brown Report*, FY 1978, p. 45.

40. *Ibid.* See in this connection, the testimony of Secretary of State Vance before the House Subcommittee on International Operations, excerpted in *Selected Statements*, 78-4, 1 April 1978, p. 1.

41. The formula for probability of kill against hardened targets is $P_K = \exp(-f(h) \cdot K)$ where $K = \text{Yield } 2/3 / CEP2$ and $f(h)$ = function of hardness. See Thomas A. Brown, "Missile Accuracy and Strategic Lethability," *Survival*, March/April 1976, pp. 52-60.

42. *The Stratton Report*, with the judgments reached by Alton Quanbeck and Barry Blechman, *Strategic Forces: Issues for the Seventies* (Washington: The Brookings Institution, 1973). One of the most comprehensive and balanced computations is that by Thomas Garwin and John Steinbruner, "Strategic Vulnerability: The Balance between Prudence and Paranoia," *Long Range U.S.-U.S.S.R. Competition: National Security Implications* (Washington: National Defense University, 1976), pp. 54-94.

43. This is also the conclusion of the Congressional Budget Office, *Counterforce Issues for the U.S. Strategic Nuclear Forces* (Washington: U.S. Govt. Print. Off., January 1978), pp. xii-xiii.

44. *SALT II: Problems and Prospects*, p. 11.

45. *Brown Report*, FY 1979, p. 64.

46. The United States is considering building a new mobile ICBM—the so-called Minuteman X—that would be moved from one to another of some 4,000 empty silos. (*The New York Times*, 18 June 1978, p. 3.) If this plan were carried out, or if large numbers of long-range GLCMs were built, verification of numerical limits on missiles would be virtually impossible.

47. Clarence A. Robinson, Jr., "U.S. Weighs New SALT Offer to Soviets," *Aviation Week and Space Technology*, 4 September 1978, p. 24. Paul Warnke, Director, U.S. Arms Control and Disarmament Agency, in his address to the Conference on United States Security and the Soviet challenge, Pittsburgh, Pa., 17 October 1978, did not mention the issue of new missiles but did add two others: disagreement over the schedule for reductions in Soviet SNDVs necessitated by the proposed treaty and over the number of ALCMs which an airplane could carry.

48. For example, Brezhnev allegedly expressed to U.S. Ambassador Toon on 9 November "the urgency of completing preparation of a new agreement on the limitation of strategic armaments on the basis of the agreements and principles reached as a result of recent talks."

Pravda, 16 November 1977, cited in *Soviet World Outlook*, December 1977, p. 4. Following the visit to Moscow in April 1978 of Secretary of State Vance, the Joint Communique issued "Expressed the intention [of both sides] to work intensively to conclude an agreement . . . at the earliest possible time," *The New York Times*, 23 April 1978, p. 18.

49. For one in a long series of reports see the article by Flora Lewis, "The Insulated Nuclear Talks," *The New York Times*, 15 July 1978, p. 2.

50. Secretary of Defense Brown, in a carefully worded reply to a question on this subject, stated that "The United States has made no commitment not to transfer [cruise missiles] technology to its European allies"—but he did not specify the time when this technology might be transferred and his references to actual deployment of GLCMs and SLCMs said nothing about the ranges or the armaments of these missiles. News Conference Following Defense Planning Committee Meeting at NATO Headquarters, 7 December 1977, in *Selected Statements*, 78-1, January 1978, p. 2. See, however, *The Strategic Arms Limitation Talks*, p. 8, that states that the United States "Has taken into account allied security concerns in its negotiating positions."

51. *The Chicago Tribune*, 16 June 1977, p. 8.

52. See the article by Hedrick Smith, *The New York Times*, 14 November 1977, p. 18, and that by Adam Clymer, *The New York Times*, 20 April 1978, p. A-9.

53. Article by Richard Burt, *The New York Times*, 14 November 1977, p. 18.

54. *Ibid.*

55. *The New York Times*, 12 February 1978, p. 1. See also *Soviet World Outlook*, December 1977, pp. 4 and 5; 15 March 1978, pp. 3-6; and 15 April 1978, pp. 1-2.

56. *Brown Report*, FY 1979, p. 63.

57. *The New York Times*, 6 October 1977, p. A-6.

58. At present, the Navy Tomahawk cruise missile, which can be readily adapted to ground launches, has a projected range of only 1,200 nautical miles (Tinajero, p. 2). However, there is no reason why the range of these weapons cannot be increased by adding a "fuel plug," as the Air Force is doing with the AGM 86B, or by increasing the overall dimensions of ground-launched cruise missiles. Alternatively, medium-range GLCMs could be deployed in areas close to the Soviet Union, as were early U.S. IRBMs.

59. Testimony by John Walsh, Deputy Director for Strategic and Space Systems, Office of the Director of Defense Research and Engineering, in FY 1977, *Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserves and Civilian Personnel Strength*, Hearings Before the Senate Committee on Armed Services, 94-2, 1976, Part 12, p. 6613, quoted in *U.S. Strategic Nuclear Forces: Deterrence Policies and Procurement Issues*, Budget Issues Paper, Congressional Budget Office, Congress of the United States, April 1977, p. 45.

60. *Brown Report*, FY 1979, p. 110.

61. Address Before the U.N. General Assembly, 4 October 1977, excerpted in *Selected Statements*, 77-9, 1 November 1977, p. 10.

62. *Ibid.*

63. *Brown Report*, FY 1979, p. 56.

64. "News Conference at Moscow, July 3," *Department of State Bulletin*, 29 July 1974, p. 215.

65. "Number Mysticism, Rationality and Strategic Balance," p. 490.

66. *U.S. Strategic Nuclear Forces: Deterrence Policies and Procurement Options*, Table 3, p. 28 and Table 4, p. 32.

67. See for example, Leon Gouré, *et al.*, *The Role of Nuclear Forces in Current Soviet Strategy*, Monographs in International Affairs, Center for Advanced International Studies, University of Miami, 1974, especially pp. 1-5 and 8-10, and *Soviet World Outlook*, August 1976, p. 7. A discussion of the implications for arms control of these beliefs will be found in Wiegand Pabsch, "Détente and Disarmament," *NATO Review*, October 1977, pp. 9-13.

68. The Center for Arms Control and International Security Studies is just completing one analysis of the Political Utility of Force and is starting another of the Political Implications of Shifts in the Strategic Balance: The Case of Western Europe.

69. *USA: Economics, Politics, Ideology*, April 1976, translated and reported in *Soviet World Outlook*, 15 May 1976, p. 5.

70. *The New York Times*, 12 February 1978, pp. 1 and 12.

71. Under this plan, 200 or so Minuteman X ICBMs would be secretly and randomly rotated in and out of some 4,000 silos, more or less as is the pea in the "shell game" so familiar to carnival-goers.

72. It is only fair to record that this opinion is not shared by everyone. See, for example, the interchanges between Arthur M. Cox and George F. Will in the *Washington Post*, 2 April 1978, 12 April 1978 and 13 April 1978.